What is claimed is:

1.  A network for providing switched virtual circuit Layer-2 VPNs, said network comprising:

    a set of elements interconnected by services;

    at least one first subset of said elements defining a private network;

    at least one second subset of elements different from said first subset defining a provider network wherein at least two subgroups of said first subset of elements may be connected via said provider network;

    a provisioning mechanism used to define element membership in said first subset of elements;

    a plurality of customer ports maintained on said elements of said first subset of elements;

    a plurality of provider ports maintained on said second set of elements, each of said plurality of provider ports connected by data and signalling services to a customer port;

    a port information table at each element of said provider network having a provider port, said port information table containing mapping information relating addresses of customer ports to addresses of provider ports for said first subset of elements; and

    a signalling mechanism used to create Layer-2 connectivity between elements within said first subset of elements at the Layer-2 level across said second subset of elements.

2.  A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, wherein said signalling mechanism is an MPLS signalling mechanism.

3.  A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, further comprising an auto-discovery mechanism for distributing said mapping information to port information tables of said provider network.

4. A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 3, wherein said auto-discovery mechanism for distributing said mapping information uses Border Gateway Protocol.

5. A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, wherein said provisioning mechanism operates in conjunction with said signalling mechanism to restrict element connectivity to elements of said first subset.

6. A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, wherein said data and signalling services have IP signalling services.

7. A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, wherein said customer port addresses need be unique only within said first subset of elements.

8. A network for providing switched virtual circuit Layer-2 VPNs as claimed in claim 1, wherein said customer port addresses and provider port addresses use an addressing scheme chosen from the group of IPv4, IPv6, and NSAP.

9. A method of organizing a network having a set of elements interconnected by services, wherein at least one first subset of said elements defines a private network and at least one second subset of elements different from said first subset defines a provider network and wherein at least two subgroups of said first subset of elements may be connected via said provider network, said method comprising:

    defining element membership in said first subset of elements via a provisioning mechanism;

    establishing a plurality of customer ports within said elements of said first subset of elements;

establishing a plurality of provider ports within said second set of elements, each of said plurality of provider ports connected by data and signalling services to a customer port;

establishing a port information table at each element of said provider network having a provider port, said port information table containing mapping information relating addresses of customer ports to addresses of provider ports; and

creating Layer-2 connectivity within said first subset of elements at the Layer-2 level across said second subset of elements via a signalling mechanism.

10. The method of claim 9 wherein said signalling mechanism is an MPLS signalling mechanism.

11. The method of claim 9, further comprising the step of:

distributing said mapping information to port information tables of said provider network via an auto-discovery mechanism.

12. The method of claim 11, wherein said auto-discovery mechanism for distributing said mapping information uses Border Gateway Protocol.

13. The method of claim 9 further comprising the step of:

restricting element connectivity to elements of said first subset via said provisioning mechanism operating in conjunction with said signalling mechanism.

14. The method of claim 9 wherein said data and signalling services have IP signalling services.

15. The method of claim 9 wherein said customer port addresses need be unique only within said first subset of elements.

16. The method of claim 9 wherein said customer port addresses and provider port addresses use an addressing scheme chosen from the group of IPv4, IPv6, and NSAP.

17. A method of organizing a network having a set of elements interconnected by services, wherein at least one first subset of said elements defines a private network and at least one second subset of elements different from said first subset defines a provider network and wherein at least two subgroups of said first subset of elements may be connected via said provider network, said method comprising:

   defining a L2VPN topology;

   establishing a plurality of customer ports within said elements of said first subset of elements;

   establishing a plurality of provider ports within said second set of elements, each of said plurality of provider ports connected by data and signalling services to a customer port;

   creating a Layer-2 Port Information Table for each provider port;

   establishing the identity of customer ports attached to each provider port, and populating the Layer-2 Port Information Table at that provider port with mapping information relating addresses of customer ports to addresses of provider ports;

   distributing said mapping information to Layer-2 Port Information Tables of said provider network via an auto-discovery mechanism; and

   creating Layer-2 connectivity within said first subset of elements at the Layer-2 level across said second subset of elements via a signalling mechanism upon request from an element within said first subset of elements.